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AUTHOR Schuster, Donald H.
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ABSTRACT

A study was conducted to determine whether the spelling achievement and school attitudes of third grade students from the middle socio-economic level could be accelerated relative to a control group with the SALT method, Lozanov's Suggestive-Accelerative Learning and Teaching. Spelling test words for pre- and post-testing were drawn from the common words in the SALT text and the conventional text. Independent variables of the student-teacher affective relationship, perceived school stress, and school learning orientation were included in the analysis of covariance. The results of this comparative study between one class taught by a SALT trained teacher and one taught by a conventionally trained instructor revealed the following: (1) the SALT class performed significantly better on the spelling achievement test than the controls; (2) there were reversed significant differences on the scales of student-teacher affective relations and school stress favoring the controls; and (3) on the school learning questionnaire, there was no significant difference between control and SALT students at the end of the year. (PMJ)

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Evaluations of the Suggestive-Accelerative Lozanov Teaching (SALT) Method in Teaching Various Subjects to Low- and Mid-Socioeconomic Elementary and Secondary School Students

Donald H. Schuster

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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Evaluation of the Suggestive-Accelerative Lozanov Teaching (SALT) Method in Teaching Spelling to Mid-Socioeconomic Third Grade Students (Teacher #1)

D. H. Schuster

Abstract. This study compared the effectiveness of a teacher trained in the SALT method in teaching spelling with a teacher using her own method in teaching spelling to mid-socioeconomic status third graders (N = 43). The SALT-taught students averaged significantly better ($p < .01$) in spelling achievement at year-end. In contrast, the SALT students had significantly poorer student-teacher attitudes and felt more stress at year-end than did the control group.

Introduction. The purpose of this study was to determine whether the spelling achievement and school attitudes of third grade students from the middle socioeconomic level (SES) could be accelerated relative to a control group with the SALT method, Suggestive-Accelerative Learning and Teaching. ~~The method was~~ developed by Lozanov (1971, 1975) and ~~has been~~ used successfully in his native Bulgaria for teaching many school subjects, especially foreign languages, reading and mathematics. Gritton and Bordon (1976) adapted the method successfully for eighth grade spelling. A review of the Americanization of suggestopedia and associated researches is covered in Schuster et al (1976). Thus, it seemed reasonable to expect that SALT would facilitate the acceleration of learning spelling in this study.

Method. The spelling teacher in this study volunteered to participate in this project in mid-summer 1976. She completed the 120-hour graduate level course in SALT teacher training at Iowa State University during second summer session 1976. After completing the course which included SALT practice teaching, she was deemed adequately trained. She used the SALT method consequently in teaching spelling during the school year 1976-78. Data only from the second year are given here as we had problems with experimental procedures the first year.

A control group was obtained through a cooperative school nearby where another teacher volunteered to provide comparison data in connection with teaching spelling her own conventional way. Unfortunately, this teacher used a different spelling textbook; most of the third grade spelling words she would teach would not normally be covered that year by the SALT teacher. The research staff searched through both spelling texts for common words in both books. Some 80 common words were found. The researcher randomly selected common words from both teachers to constitute two alternate forms of a third grade spelling test. One form was given as a pretest early in the school year and the other as a posttest late in the school year.

An analysis of covariance (ANACOVA) design was used with independent variable of treatment (SALT vs. control) and pretesting as covariate. The dependent variables were raw number of words spelled correctly and three attitude scores from the Brooks Student Questionnaire (BSQ) as refined by Schuster and Millard (1978). These three independent scales are, student-teacher affective relations, perceived school stress and school-learning orientation. Each student's posttest score was adjusted for initial differences in pretest to compensate for possible group differences at the start.

Results and Discussion. Table 1 is the ANACOVA summary for the effects of pretest and treatment on spelling achievement for mid-socioeconomic third grade students. Significant effects were observed between pretest and posttest ($p < .01$) and for treatment ($p < .01$) on adjusted posttest scores. The significant pretest effect reflects the well-known and expected correlation between alternate forms of the same test. The SALT class posttest average adjusted for pretest was significantly higher (better) on spelling than the control class average.

Table 2 presents the ANACOVA summary for the effects of pretest, treatment and sex of subject on the Brooks Student Questionnaire (BSQ) affective relations scores. As expected, pretest scores significantly ($p < .05$) affected posttest

scores. Unexpectedly, the control group students had significantly lower (better) affective relations scores at year-end while the SALT students' scores remained about the same. The interpretation is obscure.

Table 3 presents the ANACOVA summary for the effects of pretest, treatment and sex of subject on third grade BSQ stress scores. The usual significant pretest effect was seen ($p < .01$). Again, unexpectedly, the control group raised (improved) its score at year-end on the stress score while the SALT groups scores stayed about the same.

Table 4 presents the ANACOVA summary for the effects of pretest, treatment and sex of subject on third grade BSQ learning orientation scores. Neither the pretest nor treatment effects were significant ($p < .05$). However, the effect of sex was significant ($p < .05$). Since high scores here reflect poor learning orientation, the interpretation is that the males deteriorated worse in school learning orientation than did the females at year-end.

In an attempt to interpret the positive achievement result but negative attitude results, correlation coefficients were computed between achievement and attitude scores for pretest, posttest and gain scores just for 17 SALT students. Two near-significant trends were seen. The posttest achievement and affective relations scores correlated 0.40 ($p = .11$). Higher achievement scores went with higher (poorer) affective relations scores. Achievement gain scores correlated -0.41 ($p = .10$) with posttest stress scores. Spelling improvement went with higher stress scores. Thus, in the SALT class, the teacher may have tried too hard, resulting in the two worsened attitude scores.

A teacher check list for SALT lessons was filled out both by the teacher herself and independently by a skilled observer at year-end. These two agreed very well with each other except for several items dealing with imagery; the observer felt imagery was used less often than the teacher reported. However,

the check list showed that the teacher was using SALT components well and frequently. The teacher reported using SALT three hours per week (only for spelling). For the remaining school subjects the teacher did not use SALT. This contrast may have frustrated and annoyed the students resulting in the unexpected BSQ attitude results.

Summary. In testing the SALT method in a third grade spelling class with Teacher 1 at a mid-socioeconomic setting, these conclusions appear warranted:

1. The SALT class performed significantly better on the spelling achievement test than the controls.
2. There were reversed significant differences in the Brooks Student Questionnaire (BSQ) scales of student-teacher affective relations and school stress favoring the controls.
3. On the BSQ learning orientation scale, there was no significant difference between control and SALT students at year-end.

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Table 1

ANACOVA summary for the effects of pretest and treatment on spelling achievement, third grade, mid-socioeconomic status students (Teacher #1, N = 42)

Source	df	MS	F
Pretest	1	266.95	45.26**
Treatment	1	211.92	35.93**
Error	39	5.90	----

**p < .01

Treatment averages by testing

Treatment	Pretest	Posttest	Adjusted Posttest	Gain
SALT (N = 19)	27.53	38.74	38.21	11.21
Control (N = 23)	24.09	33.17	33.61	9.08

Table 2

ANACOVA summary for the effects of treatment, pretest and sex of subject on BSQ affective relations scores, third grade, mid-SES students (Teacher #1, N = 43)

Source	df	MS	F
Pretest	1	146.21	5.88*
Treatment	1	459.72	18.49**
Sex of Subject	1	92.05	3.70
Treatment X Sex	1	14.82	0.60
Error	38	24.87	----

* $p < .05$

** $p < .01$

Treatment averages by testing

Treatment	N	Raw Pretest	Raw Posttest	Adjusted Posttest	Gain
Control	23	24.78	19.96	20.10	-4.82
SALT	20	25.80	26.80	26.64	1.00

Table 3

ANACOVA summary for the effects of pretest, treatment and sex of subject on third grade BSQ stress scores, mid-SES students (Teacher #1, N = 43).

Source	df	MS	F
Pretest	1	424.76	8.35**
Treatment	1	296.71	5.83*
Sex of Subject	1	35.21	0.70
Treatment X Sex	1	47.30	0.93
Error	38	50.87	----

* $p < .05$

** $p < .01$

Treatment averages by testing

Treatment	N	Raw Pretest	Raw Posttest	Adjusted Posttest	Gain
Control	23	43.65	49.09	49.77	5.44
SALT	20	47.25	45.15	44.36	-2.10

Table 4

ANACOVA summary for the effects of pretest, treatment and sex of subject on third grade BSQ orientation scores, mid-SES students (Teacher #1, N = 43)

Source	df	MS	F
Pretest	1	63.15	2.74
Treatment	1	41.88	1.82
Sex of Subject	1	113.70	4.94*
Treatment X Sex	1	0.30	0.01
Error	38	23.03	----

* $p < .05$

Treatment and sex averages by testing

Treatment	N	Raw Pretest	Raw Posttest	Adjusted Posttest	Gain
Control	23	20.13	20.30	20.54	0.17
SALT	20	22.30	22.75	22.48	0.45
Sex					
Male	22	22.68	23.45	23.10	0.77
Female	21	19.52	19.33	19.71	-0.19

Appendix. Eisner Drawing Test: Administration and Scoring*

Administration. In order to obtain drawings made under similar, if not identical, circumstances it was decided to select a medium with which children had familiarity and a topic that would appeal to children from six to twelve years of age. The medium with which children were most familiar was colored crayons and its use, it was believed, would pose no serious problem in the classroom. Thus a new box of eight colored crayons was given to each child and a sheet of manila paper 12" x 18" was to be used for making the crayon drawings.

The use of crayons rather than paint tended to increase the likelihood that children would not have to grapple with the technical problems of controlling paint, ink or other types of fluid media. Yet because the box of cryons that was distributed was new the motivation level was considered likely to increase.

By keeping the theme constant across grade levels and by identifying a theme of playing on the school yard it seemed more likely to be able to obtain objectivity in judging and of reducing variability in the way in which the drawings were produced. To increase the likelihood of a common stimulus the teachers were given brief verbal instructions to be read or presented informally to the children. These instructions were as follows:

> "In a few minutes you will have a chance to make a crayon drawing and you will be given a brand new box of crayons to use. (The test administrator will show the crayons and paper to the subjects.) But before I give you these materials I want to tell you about what I would like you to draw.
>
> "All of you play with friends in the school yard before school or after school or at recess. I would like you to think now about the kind of things you do in the school yard. What

*Somewhat modified from Eisner (1967).

kind of things do you do in the school yard? (The test adminstrator asks this question but does not wait for an answer.)

"I would like you to make a crayon drawing of you and your friends playing in the school yard. You will have twenty minutes to complete your drawing." (The materials are then passed out and the subjects told to begin. If questions are asked by the subjects they are to be answered in such a way as to get them into the act of drawing with the crayons.)"

Scoring. The judges went over all of the single test data (no pretest and posttest) in a preliminary way to discuss and agree on Spatial Maturity and Esthetic Quality scores per drawing. The judges felt that these drawings could not be classified entirely according to Eisner's scheme (1967), so three new categories were added, marked "New" below.

When this period of analysis and discussion had terminated, 16 categories had been formulated. For each category model drawings exemplifying each were selected and verbal criteria were formulated. Below are listed each of the 16 categories used in the study and the verbal criteria accompanying them.

Category	Description
1	No horizon line present. Morphemes "floating", not standing on the edge of the paper.
2	Morphemes standing on the bottom-edge of the paper. No horizon line drawn.
3	Some morphemes standing on the bottom-edge of the paper, others floating in space.

Category	Description
4	Morphemes standing on bottom edge of paper and horizon line drawn.
5	Partial horizon line drawn.
6	Two or more horizon lines drawn.
7	Horizon line drawn. Morphemes floating above horizon line.
8	Horizon line drawn. Morphemes standing on horizon line.
9	Horizon line drawn. Some morphemes standing on horizon line, other morphemes floating above horizon line.
10	Overhead (plan) view of morphemes and background (new).
11	Morphemes overlap ground but do not overlap horizon line.
12	Morphemes standing on bottom edge of paper and overlapping horizon line.
13	Horizon line drawn. Morphemes clearly overlapping horizon line.
14	Horizon line drawn. Morphemes overlapping each other.
15	Perspective view with morphemes so displayed (new).
16	Superior in some way(s) to lower categories (new).

In addition to the assessment of spacial syntax displayed in the drawings

used in this study another type of assessment was attempted -- that of the aesthetic syntax of the drawings produced by the population as a whole, by each of the two socio-economic groups and by socio-economic group and sex. You may remember that in the scheme used to describe the conceptual underpinning of this study two types of syntax were identified. Spacial syntax deals with the creation of spacial illusion through the use of drawing technologies that the child learns to employ as he matures. Aesthetic syntax deals with the sense of "rightness", closure and goodness of formal relationships among the morphemes drawn. One of the tasks undertaken in this study was that of assessing the aesthetic quality of the drawings that were collected.

The assessment of aesthetic quality is a task that is difficult for many reasons: One, the judges may have different notions of what constitutes aesthetic quality; two, the differences between good and poor aesthetic quality can be quite subtle.

Evaluation of the Suggestive-Accelerative Lozanov Teaching (SALT) Method in Teaching Spelling to Low Socioeconomic First Grade Students (Teacher #5)

D. H. Schuster

Abstract. This study compared the effectiveness of a teacher trained in the SALT method in teaching spelling with a teacher using her own method in teaching spelling to low socioeconomic status first graders (N = 30). At year-end, the SALT taught students were nearly significant better than the control students on spelling achievement ($p<.055$) and perceived stress ($p<.066$).

Introduction. The purpose of this study was to determine whether the spelling achievement and school attitudes of first grade students from the low socio-economic level (SES) could be accelerated relative to a control group with the SALT method, Suggestive-Accelerative Learning and Teaching. The method was developed by Lozanov (1971, 1975) and has been used successfully in his native Bulgaria for teaching many school subjects, especially foreign languages, reading and mathematics. Gritton and Bordon (1976) adapted the method successfully for eight grade spelling. A review of the Americanization of suggestopedia and associated research is covered in Schuster et al (1976). Thus, it seemed reasonable to expect that SALT would facilitate the acceleration of learning spelling in this study.

Method. The spelling teacher in this study volunteered to participate in this project in mid fall 1976. She completed a 40-hour in-service teacher training graduate course given by Iowa State University during the winter 1976-77. After completing the course which included supervised SALT practice teaching in her regular classroom, she was deemed adequately trained. She used the SALT method consequently in teaching spelling during the school year 1977-78.

A control group was obtained through a cooperative school nearby where another teacher volunteered to provide comparison data in connection with teaching spelling her own conventional way. Both teachers used the Dolch Word List of 177 sight words as a source of words for teaching spelling (Dolch & Buckingham, 1936). The researcher randomly selected Dolch words to constitute two alternative forms of 30 words each for a first grade spelling test. One form was given as a pretest midway in January as few first graders can read or spell in the fall. The posttest was given late in the spring by both teachers.

The Brooks Student Questionnaire (Schuster & Millard, 1978) which measures student-teacher affective relations, perceived stress and learning orientation was given only as posttest in the spring.

An analysis of covariance (ANACOVA) design was used with independent variable of treatment (SALT vs. control) and pretesting as covariate. The dependent variable was raw number of words spelled correctly. Each student's posttest score was adjusted for initial differences in pretest to compensate for possible group differences at the start. An analysis of variance (ANOV) design was used for the BSQ attitude data, as pretests were not available.

Results and Discussion. Table 1 presents the ANACOVA summary of effects of pretest and treatment on first grade spelling achievement for low socioeconomic status students. A significant effect ($p<.01$) was found for pretest. The significant pretest effect reflects the well known and expected correlation between alternate forms of the same test. A near significant ($p = .074$) trend was found for treatment: the SALT group had higher posttest spelling scores than did the controls. Note that this occurred in only 4 months, not a full year of instruction. An inspection of the score distribution revealed two low outliers, causing an inflated error variance. The average gain scores were analyzed with Student's t-test with a resultant value of 1.94 ($p < .055$). This near-significant value

indicates that the SALT students gained appreciably more spelling words in 4 months than controls.

Data on the analyses for the BSQ (Brooks Student Questionnaire) are given in Tables 2-4 for the scales of student-teacher affective relations, perceived school stress and learning-school orientation. A near significant trend ($p=.066$) occurred for the stress scores, with the SALT group's having a higher (better) average than the controls. Without pretest data, the interpretation of this trend is uncertain: it may have been the result of the SALT treatment as expected, or it may have been a reflection of initial differences between groups.

This report gives data on the second year of teaching for this teacher. The present year's data here repeat the previous year's effort, where she had achieved both significant spelling achievement and BSQ learning orientation differences favoring SALT students over controls (Schuster, 1977).

A teacher checklist for SALT lessons was filled out independently by the teacher herself and by a skilled observer at year-end. These two sets of ratings agreed almost perfectly with each other. The teacher used SALT components only for spelling.

Summary. In testing the SALT method in a first grade spelling class with Teacher # 5 at a low socioeconomic setting, these conclusions appear warranted:

1. There was a near significant difference on the spelling achievement test favoring SALT vs. controls.
2. There was a near significant trend on the BSQ stress attitude score favoring SALT vs. controls. Without pretest data, the interpretation is uncertain.

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ANACOVA summary of the effects of pretest and treatment on first grade spelling achievement, low socioeconomic status (Teacher #5, N = 30)

Source	df	MS	F
Pretest	1	816.45	34.83 **
Treatment	1	79.07	3.37'
Error	27	23.44	

' p = .074

** p < .01

Treatment averages by testing

Treatment	N	Raw Pretest	Raw Posttest	Adjusted Posttest	Gain
Control	16	12.06	19.81	19.34	7.76
SALT	14	10.71	22.07	22.61	11.28

Table 2. ANOV summary for the effects of treatment on first grade BSQ affective relations scores, low SES (Teacher #5, N = 34)

Source	df	MS	F
Treatment	1	5.69	0.14NS
Error	32	40.88	

NS: Not significant, $p > .05$

Treatment averages

Treatment	N	Posttest
Control	18	26.56
SALT	16	27.38

Table 3. ANOV summary for the effect of treatment on first grade BSQ perceived stress scores, low SES (Teacher #5, N = 34)

Source	df	MS	F
Treatment	1	220.08	3.54'
Error	32	62.21	

' p = .066

Treatment averages

Treatment	N	Posttest
Control	18	37.78
SALT	16	42.88

Table 4. ANOV summary for the effect of treatment on first grade BSQ learning orientation scores, low SES (Teacher # 5, N = 34)

Source	df	MS	F
Treatment	1	28.04	0.84 NS
Error	32	33.26	

NS: Not significant, $p > .05$

Treatment averages

Treatment	N	Posttest
Control	18	20.44
SALT	16	18.63